

AMENDMENTS TO THE CLAIMS

Kindly amend the claims as follows:

CLAIMS

Claim 1. (currently amended): A micro-dispensing nozzle comprising:

a housing with at least one exit orifice;

a magnetostrictive valve in proximity to said orifice,
said magnetostrictive valve having an open state and a
closed state;

a means for applying a magnetic field to said
magnetostrictive valve, said magnetostrictive valve
changing shape in response to said magnetic field,
said changing shape causing said orifice to change
states[+];

an x-y positioner holding said housing for allowing
said nozzle to be stepped through an array of x-y spot
positions.

Claim 2. (original): The magnetostrictive dispensing nozzle of claim 1 wherein said magnetostrictive valve contains a magnetostrictive rod.

Claim 3. (original): The magnetostrictive dispensing nozzle of claim 2 wherein said magnetostrictive rod lengthens under application of a magnetic field.

Claim 4. (original): The magnetostrictive dispensing nozzle of claim 3 wherein said magnetostrictive rod is held in a pre-extended state by a bias magnetic field.

Claim 5. (original): The magnetostrictive dispensing nozzle of claim 4 wherein said pre-extended state of said magnetostrictive rod is relaxed upon application of a control magnetic field, whereby said rod contracts upon application of said control magnetic field causing said orifice to open.

Claims 6-7 (withdrawn).

Claim 8. (original): The magnetostrictive dispensing nozzle of claim 1 wherein said housing contains an entrance orifice, said entrance orifice coupled to a precision pump.

Claim 9. (currently amended): The magnetostrictive dispensing nozzle of claim 1 [~~wherein said means for means for applying a magnetic field is a magnetic field coil exterior to said housing.~~] further comprising a plurality of nozzles attached to said x-y positioner.

Claim 10. (currently amended): A magnetostrictive valve to control pico-liter flow from a fluid containing housing, said valve comprising a magnetostrictive rod extending into an exit orifice of said housing, said valve being extended to close said exit orifice by a bias magnetic field, said rod responding to an applied control magnetic field to contract allowing said exit orifice to open, said housing being attached to an x-y positioner wherein said housing and valve can be stepped to a plurality of x,y positions.

Claim 11. (original): The magnetostrictive valve of claim 10 wherein said rod is around 2 mm in diameter.

Claim 12. (original): The magnetostrictive valve of claim 10 wherein said rod is around 30 mm in length.

Claim 13. (original): The magnetostrictive valve of claim 10 wherein said bias magnetic field is supplied by a permanent magnetic.

Claim 14. (original): The magnetostrictive valve of claim 10 wherein said magnetostrictive rod is operated faster than 1 kHz.

Claim 15. (currently amended): A magnetostrictive valve method comprising the steps of:

placing a piece of magnetostrictive material in proximity to an exit orifice of a fluid containing housing;

maintaining pressure on fluid in said fluid containing housing;

applying a magnetic field to said magnetostrictive material to cause said magnetostrictive material to change shape, whereby said exit orifice is blocked or un-blocked according to said magnetic field[~~-~~];

attaching said housing to an x-y positioner wherein
said positioner can step to a plurality of x-y
positions.

Claim 16. (original): The magnetostrictive valve method of claim 15 wherein said magnetostrictive material is a magnetostrictive rod.

Claim 17. (original): The magnetostrictive valve method of claim 16 further comprising the step of pre-extending said magnetostrictive rod with a bias magnetic field.

Claim 18. (original): The magnetostrictive valve method of claim 17 wherein said bias magnetic field is supplied from a permanent magnet.

Claim 19. (original): The magnetostrictive valve method of claim 15 wherein said pressure is maintained by a precision pump.

Claim 20. (currently amended): The magnetostrictive valve method of claim 19 [~~wherein controlling of said pump and controlling of applying said magnetic field is by a~~

~~processor.]~~ wherein said housing contains a plurality of
said nozzles.